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CORPORATE PATENT COUNSEL
US PHILIPS CORPORATION
580 WHITE PLAINS ROAD
TARRYTOWN, NY 10591

EXAMINER	
YANG, RYAN R	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 26

Application Number: 09/118,572
Filing Date: July 17, 1998
Appellant(s): WOOD ET AL.

Russell Gross
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/11/2002.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existance of any related appeals and interferences.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-11 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,812,141	Kamen et al.	9-1998

6,111,582	Jenkins	8-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

10.1 Claims 1-4, 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamen et al. (5,812,141) in view of Jenkins (6,111,582).

As per claim 1, Kamen et al., hereinafter Kamen, disclose an apparatus for texture mapping in a computer graphics system (as illustrated in Figure 4), using a predetermined set of standardized textures (Figure 4 Texture Lookup 30), the apparatus having an input (Figure 4 92) to receive via a network identifying data identifying one of the set of standardized textures (Figure 4 control signal 92, "the Adaptive Texture Mapping Controller 90 would receive control signals 92 from the Bus 42", column 6, line 24), and means for processing the data to generate output texels of the identified textures (Figure 4 the texture manager 4), wherein each texture of the standardized set is a procedural texture, the identifying data comprises one or a sequence of program commands, the execution of which will result in the generation of a respective procedural texture, with the means for processing data comprising a processor operable to implement all such input program commands or sequences of input program commands as required to generate the procedural texture of the standardized set (column 6, line 26 – 36).

Although Kamen uses texture lookup table for texture determination (Figure 4 4), however, he also discloses in column 2, line 31 – 39 that the texture can also be derived by the means of procedural texturing.

Although Kamen disclose in Figure 4 the input 92 is connected to a bus 42 and the Adaptive Texture Mapping Controller 90 would receive identifying data (control signals 92) from the Bus 42, it is noted that Kamen does not explicitly disclose the identifying data is received via a network, however, this is known in the art as taught by Jenkins. Jenkins discloses an image generation method in which "Texture information can be pre-transmitted from the server to the client or transmitted at other scheduled times. Transmitted texture information includes conventional maps as well as **parameters for procedural methods of texture synthesis which are then generated by the client**. Alternatively, transmitted primitives can refer to materials and textures from prestored libraries of textures maintained by the client. The use of procedural textures and prestored texture libraries reduces the required client-server connection bandwidth. The use of prestored texture libraries allows the user to modify the appearance of the model by selecting texture preferences." (column 85, line 47-58).

Thus, it would have be obvious to one of ordinary skill in the art to incorporate the teaching of Jenkins into Kamen because Kamen discloses a method of texturing using procedural texture and Jenkins discloses the identifying data to execute the procedure texture can be from the network in order to reduces the required client-server connection bandwidth.

10.2 As per claim 2, Kamen and Jenkins demonstrated all the elements as applied in the rejection of independent claim 1, supra, and Kamen further discloses the input control signals are plural (column 10, line 14 – 18).

10.3 As per claim 3, Kamen and Jenkins demonstrated all the elements as applied in the rejection of independent claim 1, supra, and Kamen discloses his control signals include quality of texture (column 11, line 47 – 54).

10.4 As per claim 4, Kamen and Jenkins demonstrated all the elements as applied in the rejection of independent claim 1, supra, and Kamen discloses, in his texture mapping controller, a computation method selection device (column 10, line 31 – 49) to generate pixel value. It is obvious that his method can also be used to generating procedural textures of the standardized set.

10.5 As per claim 7, Kamen and Jenkins demonstrated all the elements as applied in the rejection of dependent claim 4, supra.

As for fabricating many elements into a single substrate, it is notoriously known in the art (Officially noted) that a processor of many elements can be fabricated onto a single substrate for the purposes of increased processing speed and reducing power and cost.

10.6 As per claim 9, Kamen and Jenkins demonstrated all the elements as applied in the rejection of independent claim 1, supra.

Since input to Kamen's apparatus (Figure 4; 42) are lines and polygons (column 6, line 25 – 26) and Kamen talks about texture in terms of "viewpoint", "perspectives" and "coordinate space" (column 1, lines 45 and 60), it is obvious that Kamen is talking about 3-dimensional polygons. Kamen also discloses means to convert 3-D data into 2-D (Figure 4; 2, 3), program command (Figure 4; select signal), and rendering means (Figure 4; 34. 28 and 6) to generate an output image with texture applied.

10.7 As per claim 10, Kamen and Jenkins demonstrated all the elements as applied in the rejection of dependent claim 9, supra.

As for storing the polygon data and program commands in a remote location, it is notoriously well known in the art (Officially noted) that the polygon data and program commands can be stored in remote location and its location stored in a local memory to be retrieved at a later time.

10.8 Claims 5-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamen et al. and Jenkins as applied to claims 1 above, and further in view of Griffin et al. (5,880,737).

As per claim 5, Kamen and Jenkins disclose a texture mapping apparatus with procedural texture and control signals. It is noted that Kamen and Jenkins do not disclose using a cache to store texture maps, however, this is known in the art as taught by Griffin et al., hereinafter Griffin. Griffin discloses that in order to reduce latency in memory accessing, textual samples can be stored in the texture cache (column 18, line 35 – 39).

It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate the teaching of Griffin into Kamen and Jenkins because disclose a method texturing using procedural texture and identifying data and Griffin discloses using texture cache to store texture data in order to reduce memory access latency.

10.9 As per claim 6, Kamen, Jenkins and Griffin demonstrated all the elements as applied in the rejection of claim 5, supra, and Kamen discloses his texture mapping apparatus has control for texture quality (column 11, line 47 – 54).

As for pacing an interpolator after the texture map, it is notoriously known in the art (Officially noted) to place an interpolator after the texture map in order to refine the texture quality.

10.10 As per claim 8, Kamen, Jenkins and Griffin demonstrated all the elements as applied in the rejection of claim 8, supra.

As for fabricating many elements into a single substrate, it is notoriously known in the art (Officially noted) that a processor of many elements can be fabricated onto a single substrate for the purposes of increased processing speed and reducing power and cost.

10.11 Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kamen et al. and Jenkins as applied to claim 1 above, and further in view of Tremblay et al. (5,925,123).

As per claim 11, Kamen and Jenkins disclos an apparatus with texture rendering means and control signals. It is noted that Kamen and Jenkins do not explicitly teaches the program commands are transmitted over the network in virtual machine code and a processor to convert the program commands to local machine codes, however, this is known in the art as taught by Tremblay et al., hereinafter Tremblay. Tremblay discloses a processor (Figure 6B; 635) to decode instruction transmitted over the network and convert it to local machine code.

It would have been obvious to one of ordinary skill in the art at the time of invention to include a processor locally as taught in Tremblay into the invention of Kamen and Jenkins in order to translate the instructions into local machine code in a network environment.

(11) Response to Argument

The appellant argues the procedural texture used in Kamen et al. is a mathematical function which is not received via a network, as required by the claim. The appellant particularly points out the claim 1 limitation "an input to receive via a network identifying data identifying one of the set of standardized texture" to support his argument. The applicant points out that in his claim limitation the identifying data "comprises one or a sequence of program commands". The appellant further argues the Kamen et al. teaching receives control signal to determine a interpolation methods, not to identify the standard texture.

The Examiner consider the argument not persuasive because the limitation "an input to receive via a network identifying data identifying one of the set of standardized texture" means identifying data is used to identify one of the set of standardized texture, no limitation on the location of the standardized texture is specified. Therefore, the Kamen et al. teaching that (in respected to Figure 4 30) "in some computer graphics system, the texture values themselves are not contained in a pre-stored table ... but rather are calculated or derived from a mathematical function which is used to model the associated texture values. The process is called procedural or solid texturing" (column 2, line 31-36) meet the claimed limitation.

As for the identifying data is comprised of one or a sequence of program commands, this limitation is met by Jenkins teaching. Jenkins teaches "Transmitted texture information includes conventional maps as well as parameters for procedural methods" (column 49-51). Since it is already known that a procedural texture can be a mathematical function, the parameters transmitted to run the procedural texture have to include the commands to place of the parameters in the mathematical function; the parameters can also be the boundary conditions, such as when to start and stop to run the function and number of iterations, of the mathematical function. Without these parameters the mathematical function, or procedural texture, could not run. Therefore, the parameters taught by Jenkins are a set of program commands.

As for the control signal is not used for identifying the standard texture argument, Kamen et al. teach "Controller 90 would determine the desired interpolation method based upon the control signals received and would then pass the method instructions to the texture interpolation system 3" (column 6, line 26-30), which either through U, V signals or map selection 28 (Figure 4) selects a texture map 30. Thus, a standard texture is eventually selected.

(12) Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ryan Yang** whose telephone number is **(703) 308-6133**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ryan Yang
July 25, 2002

CONFEREE:

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Mark Zimmerman MZ

Michael Razavi MR

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600